

WHAT IS CLAIMED IS :

1. A circuit for operating a valve closure system that has an air motor for turning a handle of a tank valve, the circuit comprising:

5 a first valve that has a first port for connection to an air source and a second port, and that is selectively operable to a first position for closing the first port to the second port and to a second position for opening the first port to the second port; and

 a second valve that has a first port connected to the second port of the
10 first valve, a second port for connection to a port of the air motor that operates the air motor, and a third port for connection to an emergency air source, and that, in the absence of delivery of emergency air to the third port, opens the first port to the second port to allow bi-directional airflow between its first port and its second port while closing the third port to both
15 its first and second ports, and upon delivery of emergency air to the third port forces the third port to open to its second port regardless of whether its second port is open or closed to its first port.

2. A valve circuit for operating a valve closure system that has an air
20 motor for turning a handle of a tank valve, the valve circuit comprising:

 a non-emergency air port for connection to a non-emergency air source;

 an emergency air port for connection to an emergency air source;

 an outlet port for connection to a port of the air motor that operates
25 the air motor;

 a valve arrangement for operatively relating the non-emergency air port, the emergency air port, and the outlet port comprising a first valve

mechanism that is selectively operable to a first position for causing air from the non-emergency air port to be delivered to the outlet port to operate the air motor in the absence of emergency air being delivered to the emergency air port, and to a second position that does not cause delivery of air from the non-emergency air port to the outlet port, and a second valve mechanism that upon delivery of emergency air to the emergency air port forces the outlet port open to the emergency air port regardless of whether the first valve mechanism is in its first position or its second position.

10 3. A valve closure system comprising:

an air motor for turning a handle of a tank valve; and
a circuit for operating the air motor,

wherein the circuit comprises a) a non-emergency air port for connection to a non-emergency air source, b) an emergency air port for connection to an emergency air source, c) an outlet port for connection to a port of the air motor that operates the air motor, d) a valve arrangement for operatively relating the non-emergency air port, the emergency air port, and the outlet port,

wherein the valve arrangement comprises e) a first valve mechanism that is selectively operable to a first position for causing air from the non-emergency air port to be delivered to the outlet port to operate the air motor in the absence of emergency air being delivered to the emergency air port, and to a second position that does not cause delivery of air from the non-emergency air port to the outlet port, and f) a second valve mechanism that upon delivery of emergency air to the emergency air port forces the outlet port open to the emergency air port regardless of whether the first valve mechanism is in its first position or its second position.

4. A valve closure system as set forth in Claim 3 wherein the first valve mechanism is embodied in a first valve assembly, the second valve mechanism is embodied in a second valve assembly, and a port of the first valve assembly is in direct communication with a port of the second valve assembly.

5. A valve closure system as set forth in Claim 4 wherein the port of the air motor is one that causes the motor to turn in a sense for closing the tank valve.

10

6. A valve closure system as set forth in Claim 5 wherein the air motor comprises a second port for operating the motor in a sense for opening the tank valve.

15 7. A valve closure system as set forth in Claim 6 wherein the circuit comprises an air line directly connecting the second port to another port of the first valve assembly.

8. A valve closure system as set forth in Claim 7 wherein the air motor comprises an exhaust port for exhausting air supplied either to its first port or to its second port.

9. A valve closure system as set forth in Claim 8 wherein the simultaneous delivery of substantially equal air pressures to its first port and to its second port is effective to stall the air motor.

25

10. A valve closure system as set forth in Claim 3 wherein the port of the air motor is one that causes the motor to turn in a sense for closing the tank valve.

5 11. A valve closure system as set forth in Claim 3 wherein the air motor is disposed on a mounting for mounting on the tank and the valve arrangement is also disposed on the mounting.

10 12. A valve closure system as set forth in Claim 3 wherein the air motor is disposed on a mounting for mounting on the tank and the valve arrangement is disposed apart from the mounting remote from the tank.

13. A valve closure system as set forth in Claim 3 wherein the first valve mechanism is embodied in a spool valve assembly having a spool
15 operated by a manual operating handle.

14. A valve closure system comprising:

a bi-directional air motor operable in one sense for turning a handle of a tank valve to operate the tank valve from open to closed and in an opposite
20 sense for turning the handle to operate the tank valve from closed to open, the motor having a first port for operating the motor in the one sense, a second port for operating the motor in the opposite sense, and an exhaust port for exhausting air delivered to either the first or second port; and

a circuit for operating the air motor,

25 wherein the circuit comprises a) a non-emergency air port for connection to a non-emergency air source, b) an emergency air port for connection to an emergency air source, c) an outlet port for connection to

the first port of the air motor, and d) a valve arrangement for operatively relating the non-emergency air port, the emergency air port, and the outlet port,

wherein the valve arrangement is operable e) to a condition that
5 causes air from the non-emergency air port to be delivered to the first port of the air motor, but not the second port of the air motor, in the absence of emergency air being delivered to the emergency air port, f) to a condition that causes air from the non-emergency air port to be delivered to the second port of the air motor, but not the first port of the air motor, in the absence of
10 emergency air being delivered to the emergency air port, g) to a condition that does not cause delivery of air from the non-emergency air port to either the first or second port of the air motor, and h) to a condition that upon delivery of emergency air to the emergency air port causes air from the emergency air port to be delivered to the first port of the air motor.

15